

CUSTOMER INTERVIEWS TO IMPROVE NASA OFFICE OF SPACE SCIENCE EDUCATION AND PUBLIC OUTREACH LEVERAGING SUCCESS. Leslie Lowes¹ and Gloria Jew², ¹Jet Propulsion Laboratory, 4800 Oak Grove Drive, Mail Stop 180-109, Pasadena, CA 91109 (Leslie.Lowes@jpl.nasa.gov), ²Geebs Technical Communications, 401 N. Lincoln St. Burbank, CA 91506, gjew@geebs.com

Introduction: Leveraging with organizations that serve our customers and focusing on the needs of those organizations are two prime elements of the NASA Office of Space Science (OSS) Education and Public Outreach (E/PO) Strategy. Understanding the needs of respected organizations who serve the formal education community, as well as areas of informal education such as museums, planetariums, and youth groups, serves as a basis for a successful relationship. On behalf of NASA OSS, the Solar System Exploration (SSE) Education and Public Outreach Forum has conducted a series of customer interviews with representatives from leading organizations who serve some of the audiences we wish to reach.

Rationale: "One of the biggest challenges faced by the OSS E/PO Program is the lack of direct knowledge of the needs of [formal and informal] education."¹ A basis for successful relationships and effective programs is that of a good understanding of the needs of the communities with which we wish to work, and insight into the realities of the environment in which those communities conduct business and design programs for their audiences. Our immediate purpose is three-fold: 1) to enlighten these external communities about NASA OSS E/PO infrastructure, capabilities, and assets, 2) to understand the communities' needs, discuss how OSS assets can be of benefit, as well as provide supporting information for determining measures of success in working with these communities, and 3) provide this knowledge for use as a gateway for strategic planning.

We selected individuals for on-site interviews based on the breadth of their organization's understanding and relationship with their customers and their synergy with OSS E/PO. We asked the individuals to represent the needs of their general community, including but not limited to their organization. We selected organizations with which NASA OSS has newly developing or previously unexplored relationships at the thematic level.

Participants: To date, we have interviewed representatives who are leaders in five external organization types: (1) Formal Education (K-12), Alan Gould of Lawrence Hall of Science and Tyson Brown of National Science Teachers Association SciLinks; (2) Formal Education (collegiate), Jeanne Narum of Project Kaleidoscope; (3) Informal Education/Youth Groups, Linda Fallo-Mitchell, then of the Girl Scouts USA (GSUSA); (4) Informal Education/Planetariums, Martin Ratcliffe and Jon Elvert of the International

Planetarium Society (IPS); (5) Professional/Amateur Astronomical Organizations, Larry Lebofsky of American Astronomical Society Division of Planetary Sciences and Robert Havlin, then of the astronomical Society of the Pacific.

Expected Outcome: We are developing a series of white papers summarizing the synergistic needs and activities for NASA OSS E/PO and the general types of organizations we interviewed, to be supplemented by further research on other organizations in that community. The information will contain:

- Highlights of interaction opportunities recommended by the representative, including:
 - general information exchange and awareness raising throughout our respective communities
 - potential for partnerships
 - training opportunities
 - participation in conferences, publications, and product development and dissemination
- Specific information on external organizations within the community, including contact information, web sites, audiences and numbers reached, and dates and lead times for conferences and publications.

Summary of Recommendations: Several common themes emerged from these interviews regarding ways the communities would like to interact with NASA OSS E/PO.

- All representatives stressed the desire for and importance of sustaining relationships with their community, and ensuring on-going communication.
- Most expressed interest in a single-point-of-contact within NASA OSS for the relationship.
- Providing access to OSS material and experts through one-stop shopping also would facilitate smooth interaction.
- All were interested in the infusion into their communities of current and scientifically accurate space science content, put into appropriate context. All appreciated the inspiration that space science content can provide their audiences.
- Presentation of information, and therefore programs, are best done at a thematic level.

- In cases where it helped forward the community's mission, the organizations expressed a common need for training and professional development of staff and associates on space science content.

Specific recommendations for implementing the interactions will be detailed in the white papers. Presented here are general types of interaction opportunities and selected implementation examples.

There are various levels of involvement and commitment when working with external organizations. The sustaining and nurturing a long-term relationship is exemplified through the joint, strategic planning of activities between IPS and OSS NASA E/PO entities. Working with the leadership of IPS, OSS Forums and integrated OSS Broker/facilitator efforts, a long range plan is being formulated that includes: 1) Publication in the IPS quarterly newsletter, 2) Electronic notification to IPS members of relevant OSS news, to allow local events around OSS mission activities, 3) Attendance at IPS International Conferences, with exhibits and workshops for planetarium educators, and 4) Connecting scientists to regional planetariums for expert information and speakers.

Training of the organization's staff and/or members on relevant space science topics inspires and enlightens them, and helps assure their understanding (and in some cases their comfort) with the topic. A core element of the maturing high leverage relationship with GSUSA includes presentation of OSS content at their annual international trainer workshop, where attendees learn content to take back to their regional trainers and leaders. Many organizations have training mechanisms in place into which OSS content can be directly infused, typically involving hands on activities designed for their audiences.

Almost universally, organizations trust NASA to make information available to them that is scientifically accurate. The involvement of OSS scientists themselves is the most highly desired way of assuring this and providing relevant content for the audiences.

OSS researchers can present content, develop and review materials, and act as role models. An example is the science cadre review of selected NASA web sites for SciLinks. The SciLinks activity provides web-based updates to support external web page links, printed by code in selected textbooks under an agreement with publishers.

An untapped resource for university-level partnerships is Project Kaleidoscope (PCAL), which is a national alliance to build strong learning alliances for undergraduate students in science, math, engineering, and technology departments. They also work to improve the public understanding of the purpose of a strong undergraduate science community. NASA can help to bring a unique focus to PCAL through work with community colleges and interaction with education departments. PCAL has a ten-year goal to promote the immediate transfer for research that's being done to the learning being done. Space science content can help motivate non-science majors to study science (including education students).

Further examples and recommendations will be detailed in the white papers.

Future Directions: After peer review, white papers detailing information on interacting with these types of organizations will be made available to the NASA OSS E/PO community. We anticipate they will provide significant input to the OSS E/PO working groups concerned with strategic planning and relationships with external communities, in particular the Community Based Groups and Museums and Planetariums Working Groups. Further, the SSE Forum will assist in brokering and developing further relationships with these communities. We also plan further interviews with representatives of the public library community, and with interpretive societies that present relevant science concepts in outdoor settings.

ⁱ Cohen, Susan Baker, "Office of Space Science Education/Public Outreach January 2000-May 2001 Draft Evaluation Report", August 2001

BIOGRAPHY – LESLIE L. LOWES

Leslie Lowes is the Co-Director for NASA's Solar System Exploration Education and Public Outreach (E/PO) Forum. A firm believer in explaining to the taxpayers how their money is being used in a clear and understandable manner, and what value it holds for them, she transitioned to the professional field of E/PO in 1996 as NASA's Office of Space Science (OSS) began its strategic planning and implementation. She began her E/PO career as the Galileo Mission to Jupiter Lead Outreach Coordinator. She has initiated some innovative E/PO programs such as the Galileo

Ambassador to Jupiter Program, the seed program for the highly visible Solar System Ambassador Program.

Leslie's implementation of programs and building of relationships with the E/PO community external to NASA is based on the philosophy of "asking the customer what they want".

In synergy with the OSS strategy of the involvement of the scientific research community in E/PO, she brings understanding and cultural awareness of the scientific research field from 15 years of Earth atmospheric data processing and data management for JPL, and holds an MS in Mathematics from California State University Los Angeles and a BS in Physics from the University of Texas at Arlington.